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UNITED STATES DEPARTMENT OF AGRICULTURE

DEPARTMENT BULLETIN No. 1445

Washington, D. C. ▼ December, 1926

# SERVICES IN COTTON MARKETING

By

ALONZO B. COX, Agricultural Economist
Division of Cotton Marketing, Bureau of Agricultural Economics

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ALONZO B. COX, *Agricultural Economist, Division of Cotton Marketing, Bureau of Agricultural Economics*[1]

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Satisfactory delivery of cotton from the farm to the mill requires the performance of a number of essential services. These services must be compensated for in the spread between what the spinner pays for his cotton and what the grower receives for it. Efficient marketing is concerned with the most economical and satisfactory performance of the essential services.

The cotton crop is grown by about 2,000,000 farmers on more than 40,000,000 acres of land scattered in 16 States. Cotton as it comes from the fields is not in condition to enter the channels of trade.

Marketing may be considered from the standpoint of the owner of the commodity as the means of converting a physical commodity into purchasing power or value. To do this most effectively in the case

[1] Credit is due Florena Cleaves for much assistance in the preparation of this report.

of cotton, it is necessary to perform certain services: (1) Preparation, (2) standardization, (3) classing, (4) assembling and distributing, (5) warehousing, (6) inspection and regulatory work, (7) financing, and (8) furnishing information.

## PREPARING COTTON FOR MARKETING CHANNELS

The farmer considers that his cotton is grown or produced when it is picked and on his wagon ready to move to the gin, for he is able then to count it a bale; but the only fact that has been definitely established is the number of pounds of seed cotton. The gin is such an important factor in determining the quantity of lint, its grade, and the length of staple that the cotton may be said not to be complete as a commodity until it has been ginned and baled.

### GINNING, BALING, AND WRAPPING

#### GINNING

Ginning is designed (1) to separate the lint from the cottonseed, (2) to do a reasonable amount of cleaning by removing dirt, burs, and other heavier trash, and (3) to condense the lint into a bat or layer of cotton to facilitate baling and manufacturing.

For each bale the grower delivers about 1,500 pounds of seed cotton to the gin. It is removed from the wagon by a suction pipe which delivers it to the distributer, which in turn carries it to the gin stands. Or it is delivered on the floor of the gin room, where it is delivered by another pipe to the distributer. From 30 minutes to an hour later about 478 pounds of lint cotton is delivered to the owner and as much seed as was in the seed cotton, or approximately 1,000 pounds. In most cases where the farmer does not take the seed home for planting or feed, it is bought by the gin and sold to a cottonseed-oil mill. The gin operator occasionally buys the bale of lint cotton, and in some instances the operator buys the seed cotton as a regular business. At the close of the season it is customary throughout most of the Cotton Belt for the gins to buy the remnants of seed cotton from the farmers.

Figure 1 shows several wagon loads of seed cotton waiting their turn at the gin, and Figure 2 shows cotton after ginning and baling.

Efficiency and value of the ginning are determined by the condition of the cotton delivered by the grower, the kind and condition of the machinery, and the way it is operated. Upland cotton, which includes more than 90 per cent of the American crop, is ginned in saw gins. If cotton is wet, trashy, or dirty when it reaches the gin, the saws have a tendency to clog and are likely to turn out neppy, gin-cut cotton. These qualities lower the grade and value of the bale.

Gin machinery is constantly being improved, but not infrequently it is operated long after it has ceased to work efficiently.[2]

Even a gin in good condition with good cotton to work on may not give satisfactory results if it is not properly adjusted and operated. Unfortunately the interests of a custom ginner and of the

[2] For technical description of ginning and gin machinery, see U. S. Dept. Agr. Farmers' Bul. No. 764.

cotton grower are not the same. Some gin operators run the cotton through as quickly as possible, whereas the farmer wishes to get the best grade obtainable. To accomplish this, the gin must not be run at an excessive speed.

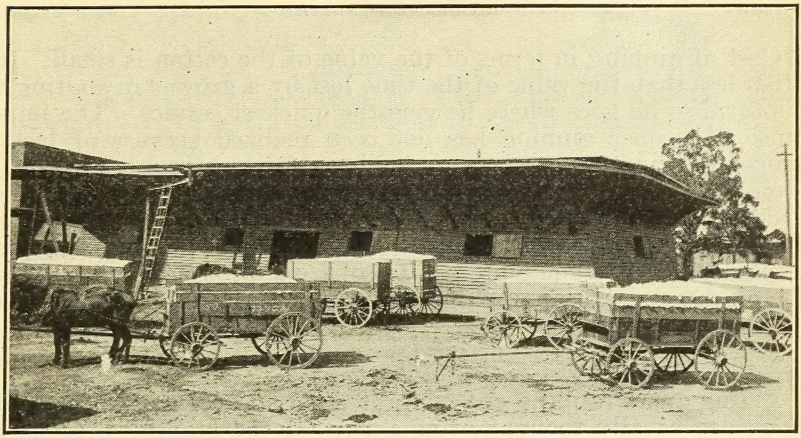

FIG. 1.—Wagon loads of seed cotton awaiting their turn at the gin

The Oklahoma Cotton Growers' Cooperative Association studied 243 gins, of which 190 were doing some damage to cotton, caused by defects in fans, cleaners, feeders, saws, ribs, brushes, lint flues, con-

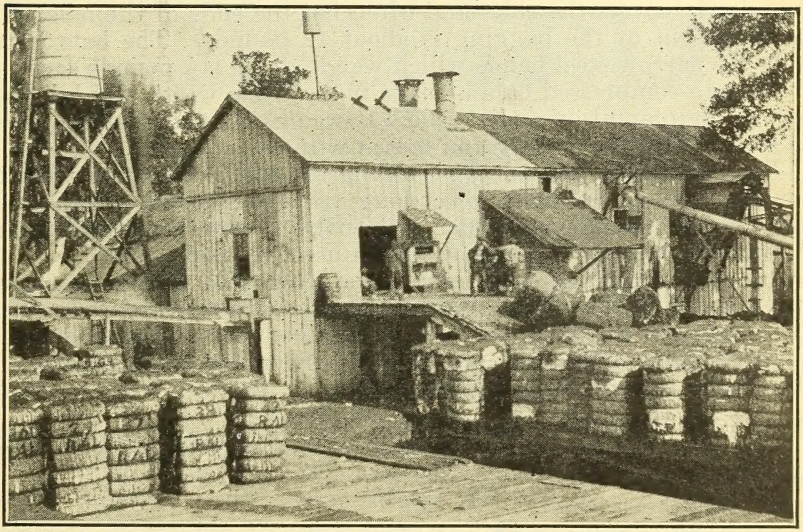

FIG. 2.—Bales of cotton after ginning

densers, or presses. The damage included gin cutting, poor samples, inefficient cleaning of lint from seed, and damage from the dripping of condenser steam on the lint in the press box. The Oklahoma State Legislature created by law the position of gin commissioner.

This commissioner must be a technical expert, and he is charged with the duties of licensing gin inspectors, teaching proper methods of operation to ginners, and, where necessary, compelling operation to meet certain standards.

### GIN PLANT OWNERSHIP

Cost of ginning in terms of the value of the cotton is small. It is often less than the value of the time lost by a grower in waiting for his turn, so he goes where he gets the quickest service. The importance of proper ginning has not been realized because of lack of proper discrimination in cotton buying. Originally, planters owned their own gins, but the increased cost of a modern well-equipped gin makes this prohibitive except in the case of the very large planter. The trend is decidedly toward custom ginning in large establishments located in trade centers. There are approximately 20,000 gins (Table 1), and the number known to be cooperatively owned is less than 100.

### BALING AND WRAPPING

Baling and wrapping are for protection and economical handling. They are usually thought of as a part of the ginning process, but technically they are separate processes. Three kinds of bales are being made by the presses located at the gins. The most important is the square plantation bale of about 12½ pounds density per cubic foot. This bale weighs about 500 pounds and when it leaves the gin press its dimensions are approximately 54 by 27 by 45 inches. It is generally wrapped in a coarse openweave jute bagging, which never completely covers the sides and often not the ends of the bale. The usual weight of the bagging is about 12 pounds. The bale is tied with six narrow steel bands which weigh about 1½ pounds each.

The gin-compressed bale is made in the same width and length of box as the plantation or flat bale. It weighs the same but is pressed to about twice the density and is tied with seven bands.

The round bale is made by winding the lint as it comes from the condenser on a core about 4 feet long. The round bale weighs about 250 pounds and is completely covered by a closely woven bagging. A round-bale press has recently been used extensively in Texas and Oklahoma without the hard core in the center and with an even pressure throughout the bale. About 150 of such presses were in use in 1924. Cotton in the round bale is in a continuous roll and can be handled easily in the factory. The weight of the tare (bagging) on these bales is approximately 2½ pounds.

TABLE 1.—*Active ginneries in the United States, and average number of running bales, excluding linters, ginned per active establishment, 1919–1922*

| Year | Active ginneries | Average number of bales ginned per active establishment |
|---|---|---|
| | *Number* | *Running bales* |
| 1919 | 18,815 | 602 |
| 1920 | 18,440 | 720 |
| 1921 | 16,192 | 493 |
| 1922 | 15,420 | 631 |

United States Department of Commerce, Bulletin No. 153, p. 37.

### COSTS OF GINNING AND BALING

The cost of ginning to the farmer consists of the money charge, the time lost, and any damage that may be done to the cotton in the process. The money cost varies in different localities, although in most of the States there is an association of gin operators which is doing much to standardize rates. In some sections charges are made on the basis of 100 pounds of seed cotton delivered and in others on the basis of 100 pounds of lint ginned. The prevailing charges in 1924 ranged from $1 to $1.20 for 100 pounds of lint cotton, or from 30 cents to 40 cents per 100 pounds of seed cotton. Bagging and ties are usually sold by the ginner to the farmer and are not included in this cost of ginning. Their prevailing cost is $1.50 for each bale of cotton.

The time cost in the rush season is an important item. A grower frequently has to wait 8 or 10 hours for his turn.

Ginning machinery is so constructed that it would cause much trouble and delay to return to each farmer the exact lint and seed he brings to the gin, but each grower is given as much as he brings and as nearly his own cotton and seed as possible. To the extent that exact returns are not given, there is mixing of seed and plating of bales. A plated bale is a bale with a layer of cotton on one side that differs from the class of the main part of the bale. This often occurs when a part of the lint from one farmer's seed cotton is put with that of another, because the lint flues are not properly cleared between lots. In a community where several varieties of cotton are grown and all are ginned at one custom gin, it is impossible to keep varieties pure, owing to the mixing of seed.[3]

The bulk of the ginning is done in September, October, and November. Gins usually are idle the rest of the year. A few ginners try to use their plants for other purposes, as grinding corn or feed.

### COMPRESSING

If the bale of cotton is to be shipped or stored for any length of time, it is compressed to reduce its size, and lower the freight, storage, and insurance charges. The standard compress makes a bale of a density of about 24 pounds per cubic foot. The high density press makes a bale of a density of 33 to 35 pounds per cubic foot. Only the square or plantation bales are compressed. Bales are compressed at the rate of about one per minute. When cotton is compressed, the owner has the sample holes covered with patches, partly for protection but mainly to have as much tare as is deducted in the market in which he expects to sell. Two or three more ties are put on the compressed bale if destined for shipment to Europe.

The standard compress bale indorsed for American cotton by the English spinners is one which weighs 500 pounds, compressed to a density of 30 pounds per cubic foot, with dimensions of 54 by 27 by 20 inches, covered with a strong closely woven cloth and tied by narrow light steel bands, the bands and cloth not to exceed 20 pounds weight, the cotton to be pressed so that it can be taken off in layers

[3] U. S. Dept. Agr. Bul. No. 288, Custom Ginning as a Factor in Cottonseed Deterioration.

which will unroll from end to end, and the bale labeled with an identification tag securely attached and stating the place of origin.[4]

Standard compresses, sometimes called railroad presses, are invariably located on a railroad. The flat bale of cotton on leaving the gin is "localed" to such a point for compression on through-rate basis. This practice is called compression in transit. The high-density presses are usually located at the large export points. The price of compressing is 75 cents per bale.

### REGINNING

In seasons of much low-grade cotton, if the discounts become unduly wide, cotton is sometimes reginned in gins with special equipment for cleaning. Different colored cottons are also sometimes blended to improve the grade from the standpoint of color or of foreign-matter content. In a normal season little reginning is done.

### MEANS OF IDENTIFICATION

One of the factors limiting the sale of spot cotton on description is the unsatisfactory means of identification. The usual method is to paint numbers or letters on one side of the bale. The paint is often poor and is often put where the bagging is later cut by the sampler. The bale must usually be re-marked each time it is bought. By the time a bale has changed hands several times it is a problem to sort out cotton according to owner and lot numbers.

Table 2 shows the condition of American cotton bales arriving for export in 1913.

TABLE 2.—*Cotton and linters condemned and inspected at all ports, September 1, 1912–May 1, 1913*

| Port | Total inspected | Condemned because of— | | | | | Total condemned |
|---|---|---|---|---|---|---|---|
| | | Insufficient marks | Insufficient density | Country damage[a] | Spider bands | Insufficient bands | |
| | *Bales* | *Bales* | *Bales* | *Bales* | *Bales* | *Bales* | *Bales* |
| Galveston | 2, 912, 549 | 148, 860 | 10, 648 | 146, 571 | 117, 106 | 19, 994 | 443, 179 |
| Texas City | 622, 790 | 5, 215 | 336 | 20, 381 | 23, 418 | 50 | 49, 400 |
| New Orleans | 1, 161, 080 | 247, 535 | 15, 582 | 13, 106 | 4, 254 | 374 | 280, 851 |
| Savannah | 756, 088 | 71, 134 | 16, 410 | 21, 276 | 796 | 31, 212 | 140, 828 |
| Brunswick | 207, 788 | 50, 779 | 257 | 10, 168 | | | 61, 204 |
| Port Arthur | 136, 899 | 51, 012 | 67 | 5, 601 | 3, 608 | 170 | 60, 458 |
| Mobile | 134, 261 | 2, 840 | 4, 443 | 1, 585 | | | 8, 868 |
| Charleston | 152, 167 | 2, 043 | 191 | | | | 2, 234 |
| Total | 6, 083, 622 | 579, 418 | 47, 934 | 218, 688 | 149, 182 | 51, 800 | 1, 047, 022 |

Rearranged from report of South Atlantic and Gulf Cotton Inspection Bureau. See p. 29 of hearings before Committee on Interstate and Foreign Commerce. House of Representatives, 63d Cong., 1st sess., June 24, 1913.

[a] Country damage includes "wet, rusty, oily, greasy," cement-stained, muddy, mildew, brick dust, rusty bands, tar, soiled, ink stains, and other damage.

The "better bale" idea has made great progress since 1913, but there is still room for much improvement. In the season 1922–23 the American ports cleared 190,594 bales direct to Manchester. Only 36 bales landed without identification marks. The quantities and kinds of damage incurred were as shown in Table 3.

[4] Official Report of the World Cotton Conference, New Orleans, La., 1919, p. 134.

TABLE 3.—*American cotton landed in a damaged condition at the Manchester docks during four seasons, 1919–20 to 1922–23*

| Season | Total imports of American cotton to Manchester | Country damage | Sea damage | Fire and other damage | Total quantity damaged | Percentage of American imports landed in a damaged condition |
|---|---|---|---|---|---|---|
| | *Bales* | *Bales* | *Bales* | *Bales* | *Bales* | *Per cent* |
| 1919–20 | 659, 855 | 10, 022 | 1, 399 | 36 | 11, 457 | 1. 7 |
| 1920–21 | 234, 018 | 2, 404 | 234 | | 2, 638 | 1. 1 |
| 1921–22 | 196, 103 | 1, 081 | 562 | | 1, 643 | . 83 |
| 1922–23 | 190, 594 | 678 | 509 | 8 | 1, 195 | . 62 |

Rearranged from reports of protective committee of the Manchester Cotton Association, 1922–23, pp. 2–3.

## STANDARDIZATION

Standardization of cotton means the setting up of authoritative measures for the qualities that have economic significance. In its broad aspects standardization includes a classification of the lint, the weight of the package, and its size, shape, and covering. Considered from the standpoint of efficient marketing, standardization must also include marketing practices and necessary auxiliary services.

If the commodity is to be distributed widely, its standardization is essential for efficient marketing. Standardization is most needed where the competing market is world-wide and where there is considerable range in quality, which materially affects value. The operations of a futures market, or a market dealing in sales for forward delivery, must be based upon recognized standards. Price quotations and market comparisons are almost useless until such quotations represent known qualities and quantities. Where values are based on distinctions which require experts to measure, as is the case with cotton, the grower has little opportunity to obtain the full value for his commodity without standardization. Standardization stimulates improvement in the product marketed. Standardization of the commodity must precede adequate methods of insurance and finance. Standardization saves expense of inspection by making possible sales by description.

The United States Government is doing much toward the standardization of commodities and marketing practices. Since the enactment of the cotton futures act in 1914, several standardization measures have been passed which have affected directly the marketing of cotton. The last of these is the cotton standards act of March 4, 1923, which provides, in effect, that if any recognized standard grade be indicated for cotton sold and shipped in interstate or foreign commerce, such grade shall be one of the grades constituting the official cotton standards of the United States.

### PRESENT STATUS OF STANDARDIZATION

The American cotton bale has the reputation of making the poorest appearance of any cotton in the world.[5] In so far as there is a

[5] Official report of World Cotton Conference, 1919, pp. 132–138 and pp. 243–249 of the same report for 1921.

standard bale for American cotton it is one that is rectangular in shape and weighs about 500 pounds. The square bale of about 500 pounds gross is the one specified in all future contracts. Between 1 and 1½ per cent of the American crop is put up in the form of a round or cylindrical bale which weighs about 250 pounds. There is no uniformity in the quantity and quality of covering put on the American square bale. The square bales of American cotton when sold to mills in America are tared at the rate of 22 to 24 pounds per bale. In Europe a deduction roughly approximating the weight of tare is assessed against the square bale. This deduction is 6 per cent, or say, 30 pounds for a bale of 500 pounds. The weight of bales varies so widely that cotton is often bought and sold in terms of pounds and not bales, though the standard 50,000-pound contract specifies that there shall be about 100 bales.

The transactions in the futures markets are the most completely standardized. These markets deal in only one contract. The contract slips are supplied in printed form. Each one is exactly like all the rest except as to price and date of delivery, which are fixed by mutual agreement. They are bought, sold, and settled according to rules uniform for all transactions. The big spot markets have standardized certain types of sales. The methods of sale most completely standardized are (1) ex-warehouse, (2) to arrive, (3) guaranteed through terms, and (4) for examination in the designated market. The exact use of these terms may vary considerably from one market to another.

Standardization in market practices is far from complete in matters relating both to the individual markets and to the relationship between markets. A f. o. b. sale in one market does not always mean the same as in every other market. Prices are sometimes quoted in a market on one kind of sale at one time and on another kind at another time. Thus the price may include freight to destination or not. It may include financing charges for a specified number of days, until date of receipt, or it may be the cash price on date of shipment. The quantity of permissible tare varies with different markets, which tends to prevent price quotations from being exactly comparable. Commissions and costs of inspection, sampling, and weighing vary, preventing accurate comparisons of market costs. Many different agencies are collecting and publishing cotton statistics. The figures gathered are often not comparable. In some cases, for example, the cotton is reported in gin-run bales; in others, in average weight or net weight bales of a standard size. Cotton statistics will fall short of their full measure of usefulness until methods and terms are thoroughly standardized.

The present standard for the classification of lint cotton involves the measurement of four factors: (1) Grade, (2) color, (3) staple length, and (4) character. Character as distinct from staple length has not been standardized.[6]

The standardization of cotton has been an evolutionary process covering a period of more than 100 years. One by one finer distinctions have been drawn which together constitute the foundation of the present standards.[7]

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[6] U. S. Dept. Agr. Cir. 278, The Commercial Classification of American Cotton, 1924

[7] For more detailed study of early developments in cotton classing see DONNELL, E. J., HISTORY OF COTTON, New York, 1872.

On August 18, 1914, the United States passed what is known as the United States cotton futures act. This act provided, among other things, for the esablishment and promulgation of "official cotton standards of the United States" to be used on the future exchanges and the bona fide spot markets. In making up these standards, two objects were kept in mind: The correct representation of all American cotton, and the suitability of the standards for international use. The new standards were favorably received in the European exchanges but never formally adopted by them. The standards for the nine white grades of cotton were officially promulgated by the Secretary of Agriculture on December 15, 1914.

Standards were promulgated for color in 1916, covering yellow-tinged, yellow-stained, and blue-stained cotton. In 1918, grades for sea island and American Egyptian cotton were promulgated, based on former commercial classification and designated as Nos. 1, 2, etc., and at the same time the official cotton standards for length of staple were promulgated. In 1921 the order of the Secretary of Agriculture was amended to provide for the issuance of practical forms for 12 of the staple lengths. They are: $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{16}$, $1\frac{1}{8}$, $1\frac{3}{16}$, $1\frac{1}{4}$, $1\frac{5}{16}$, $1\frac{3}{8}$, $1\frac{1}{2}$, $1\frac{5}{8}$, and $1\frac{3}{4}$. The length $1\frac{5}{16}$ was added by an order dated September 18, 1924, and on July 31, 1925, an order was signed, effective August 1, 1926, to provide for the issuance of practical forms for the following 17 lengths of American Upland cotton: $\frac{3}{4}$, $\frac{7}{8}$, $\frac{15}{16}$, 1, $1\frac{1}{32}$, $1\frac{1}{16}$, $1\frac{1}{8}$, $1\frac{5}{32}$, $1\frac{3}{16}$, $1\frac{7}{32}$, $1\frac{1}{4}$, $1\frac{9}{32}$, $1\frac{5}{16}$, $1\frac{11}{32}$, $1\frac{3}{8}$, and $1\frac{1}{2}$; and for 4 lengths of American Egyptian cotton—$1\frac{1}{2}$, $1\frac{9}{16}$, $1\frac{5}{8}$, and $1\frac{3}{4}$.

In 1923 a conference was called in Washington to consider the question of universal standards. The result of these negotiations between representatives of European exchanges, American exchanges, and the United States Department of Agriculture was the adoption in July, 1923, of the official cotton standards of the United States as universal standards for grade only, effective until August 1, 1924. The foreign delegates at the time requested that certain changes be made in some of the grades. Accordingly, a conference was called for July 17, 1923, to consider the proposed changes. A compromise agreement was reached on July 19, 1923. The standards adopted at this conference became the universal standards for American cotton August 1, 1924. The Secretary of Agriculture promulgated them as the official cotton standards of the United States effective on that date. By agreement no change will be made in the universal standards without the consent of all contracting parties and after one year's notice of such change.

The grade of cotton at present is determined by (1) the quantity and kind of foreign matter in it; (2) its color, to a limited extent; and (3) its preparation. These elements may be in slightly different proportions in any one grade. Thus if the color is slightly better than that required for a Middling bale it compensates for a little excess trash, and the bale is classed as Middling.[8] The box containing the 12 samples for each standard grade represents the range in both the combination of grade factors and the extremes of each factor.

The color enters into cotton classing in a double capacity. It is an element in determining the grade in both the white and the colored

[8] U. S. Dept. Agr., Cir. No. 278, 1924, pp. 14–15.

standards. Variations in colors are so wide and so important that separate standards have been made for them. Practical forms have been made for the following colors: (1) White cotton, (2) yellow

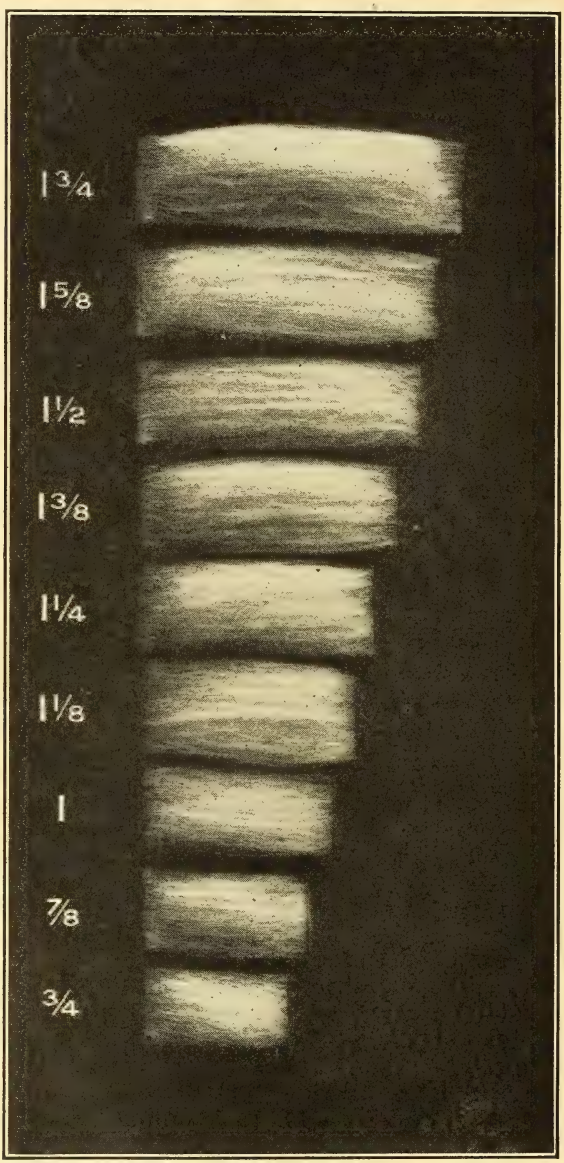


FIG. 3.—Staple lengths. Photograph of samples representing the official standard for nine selected lengths of staple

tinged, (3) yellow stained, and (4) blue stained. Three other color types are used in the trade, but no practical types are prepared for them. They are (*a*) spotted, which comes between white and yellow

tinged; (*b*) light stained, which comes between yellow tinged and yellow stained; and (*c*) gray, which comes between white and blue stained.

Staple length refers to the length of the cotton fibers. Staple in European markets is measured in terms of millimeters and expresses both length and character. What is known as 28–29 millimeter cotton in some European markets would measure little more than an inch if good "hard-bodied" cotton. Moreover, different people have different conceptions of what length and character of cotton should be delivered on a given millimeter description. What one mill will take for 28–29 millimeter another would reject.

The United States Department of Agriculture is working toward standards for staple length as determined by physical measurement. Considerable study has been given to the question of standards for character, but none have been adopted. Character influences the market value of cotton now either through the formation of types or through an appended description to standard designation of grade and staple. The chief elements constituting character are uniformity, strength, smoothness, and spirality of fibers.

Samples representing the official standard for nine selected lengths of staple are shown in Figure 3.

No mechanical means has been devised as yet to staple cotton successfully for commercial purposes. The fibers to be measured must first be "pulled"—that is, paralled and evened. The lengths of the fibers in any bale of cotton vary widely. The one who does the pulling must decide when he has a fair representation of the bale and what percentage of fibers should equal or exceed the standard to which the bale is judged to be equal. The standard itself prescribes only that a typical portion of the fibers shall be selected, but experienced cotton men in practice find no difficulty in making the necessary determinations.[9]

### UNIVERSAL STANDARDS FOR AMERICAN COTTON

The official cotton standards of the United States for grades and colors of American Upland cotton, known as the universal standards for American cotton, are prepared by the Bureau of Agricultural Economics of the United States Department of Agriculture. Practical forms or copies are prepared and sold by the department for the following grades and colors:

No. 1 or Middling Fair.
No. 2 or Strict Good Middling.
No. 3 or Good Middling.
No. 4 or Strict Middling.
No. 5 or Middling.
No. 6 or Strict Low Middling.
No. 7 or Low Middling.
No. 8 or Strict Good Ordinary.
No. 9 or Good Ordinary.

No. 3 Tinged, or Good Middling Yellow Tinged.
No. 4 Tinged, or Strict Middling Yellow Tinged.
No. 5 Tinged, or Middling Yellow Tinged.
No. 6 Tinged, or Strict Low Middling Yellow Tinged.
No. 7 Tinged, or Low Middling Yellow Tinged.

[9] For a full description of standards for cotton and how it is classed under them, see U. S. Dept. Cir. 278, 1924.

No. 3 Stained, or Good Middling Yellow Stained.
No. 4 Stained, or Strict Middling Yellow Stained.
No. 5 Stained, or Middling Yellow Stained.

No. 3 Blue Stained, or Good Middling Blue Stained.
No. 4 Blue Stained, or Strict Middling Blue Stained.
No. 5 Blue Stained, or Middling Blue Stained.

In addition to these are the following 12 descriptive grades for which no practical forms are prepared:

No. 3 Gray, or Good Middling Gray.
No. 4 Gray, or Strict Middling Gray.
No. 5 Gray, or Middling Gray.

No. 3 Spotted, or Good Middling Spotted.
No. 4 Spotted, or Strict Middling Spotted.
No. 5 Spotted, or Middling Spotted.
No. 6 Spotted, or Strict Low Middling Spotted.
No. 7 Spotted, or Low Middling Spotted.

No. 2 Tinged, or Strict Good Middling Yellow Tinged.

No. 3 Light Stained, or Good Middling Light Yellow Stained.
No. 4 Light Stained, or Strict Middling Light Yellow Stained.
No. 5 Light Stained, or Middling Light Yellow Stained.

Figure 4 shows in graphic form the general plan of standardization.

| Blue Stained | *Gray* | Standards for grades of Upland cotton White | *Spotted* | Yellow Tinged | *Light Stained* | Yellow Stained |
|---|---|---|---|---|---|---|
| | | 1 or M. F. | | | | |
| | | 2 or S. G. M. | | *2 T.* | | |
| 3 B. | *3 G.* | 3 or G. M. | *3 Sp.* | 3 T. | *3 L. S* | 3 S. |
| 4 B. | *4 G.* | 4 or S. M. | *4 Sp.* | 4 T. | *4 L. S.* | 4 S. |
| 5 B. | *5 G.* | 5 or M. | *5 Sp.* | 5 T. | *5 L. S.* | 5 S. |
| | | 6 or S. L. M. | *6 Sp.* | 6 T. | | |
| | | 7 or L. M. | *7 Sp.* | 7 T. | | |
| | | 8 or S. G. O. | | | | |
| | | 9 or G. O. | | | | |

Symbols in heavy type denote grades and colors for which practical forms of the official cotton standards are prepared. For the grades indicated by symbols in italics no practical forms will be furnished. Gray cotton is between the White and the Blue Stained in color, Spotted between the White and the Yellow Tinged, and Light Stained between Yellow Tinged and Yellow Stained.

The grades shown above the heavy horizontal line are those which at this time (1926) are deliverable on future contracts made in accordance with section 5 of the United States cotton futures act. Those below the line are at this time untenderable on such contracts

FIG. 4.—Grades and colors of the universal standards for American Upland cotton

The grades above the heavy line in Figure 4 are deliverable on future contracts under the United States cotton futures act, and those below are not. No cotton is deliverable, however, unless it is at least seven-eighths inch in staple length.

In addition, official standards of the United States have been established also for American Egyptian cotton in five numerical grades numbered from 1 to 5, inclusive, and for various lengths of staple in American Upland and American Egyptian cottons. By

order of March 3, 1926, effective August 1, 1927, standards were promulgated for extra white cotton such as that grown in the southwest section of the United States.

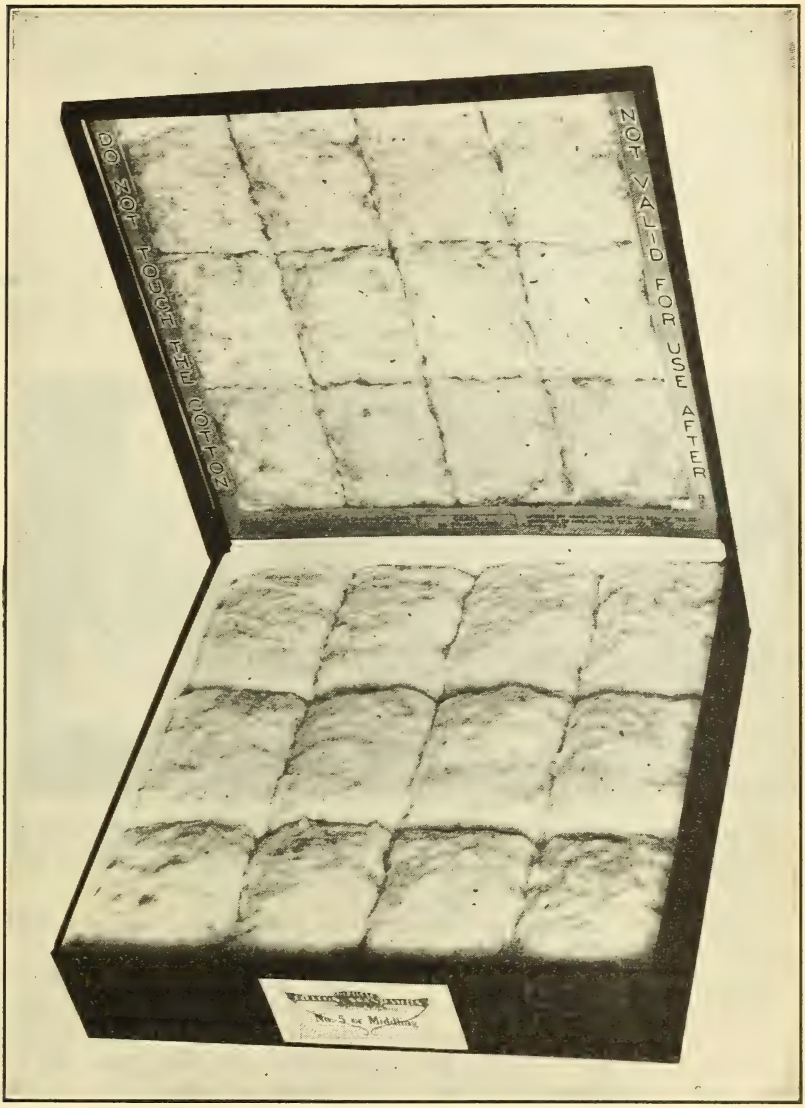


FIG. 5.—Practical form of the universal standard for the grade of Middling. In the upper half is a photograph inserted in the cover of the box to verify the preparation of the cotton and the position of the leaf. At the bottom of the photograph is the seal of the Department of Agriculture and the certificate and signature of the Secretary. Standards for the other grades and for color are represented in the same manner.

To make the standard for grade and color usable, types are made up to match the standard as nearly as is humanly possible to do so. Each grade box (fig. 5) contains 12 samples which show the extreme range of the grade for the factors which make it. In so far as

possible, samples from bales of cotton from each section of the Cotton Belt are used in making up each box.

These types are sold by the Department of Agriculture at the uniform rate of $5 per box for domestic shipment. As they are too expensive for each farmer to buy, some means should be provided whereby cotton growers can become familiar with the standards so that they can translate the widely published price quotations into terms of value for their own cotton.

The standards for staple length are 1-bale types. Comparisons are made by taking a part of the official sample and testing it against the cotton the staple of which is in question.

## COTTON CLASSING

Classification of a commodity means the rating of it according to given standards. Cotton is classed by rating a 6 to 8 ounce sample, half of which is drawn from each side of the bale. If there

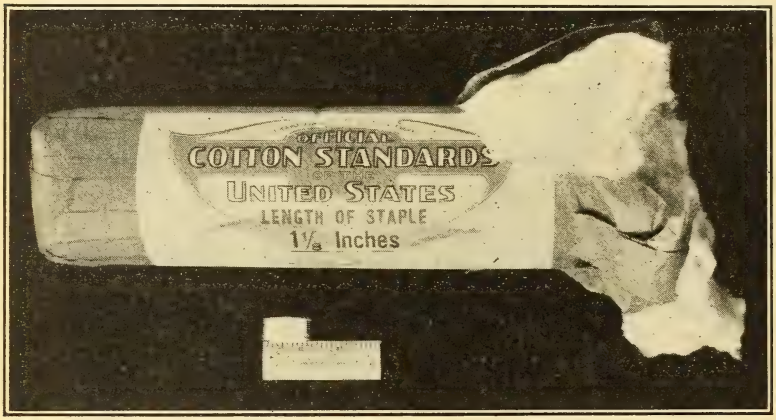


FIG. 6.—Practical form of the official cotton standard for length of staple 1⅛ inches and a typical "pull" of fibers from the cotton. Each package contains a sample of cotton of the length of staple indicated. They are sold at the rate of $1 each f. o. b. Washington.

is a considerable difference between the two parts of the sample, the bale is classed according to the sample from the low side.

Cotton grown by any given farmer may fall into several different classes, whereas the spinner obtains best results when his cotton is nearly of one class. The object of classing, therefore, is to take the cotton as it comes from the farms and put the bales of like grade, staple, color, and character into separate lots, so the farmer can sell his cotton on its merits and the spinner can find exactly what he requires with the least amount of expense and effort. Classing also makes possible the sale of cotton on description, thus reducing the costs of handling; it eliminates risk and enables the buyer and the seller to bargain on a narrower basis; and it adds to the value of cotton as collateral.

The bale is inspected to see that it has no special defects which would not be detected in sampling and classing it. If the bale has a serious defect, it is declared unmerchantable. The bale is sampled

by cutting in the bagging on each side of the bale a crescent slit about 12 inches long. The sampler draws from 3 to 4 ounces of cotton from each side of the bale and puts them together. This sample is sometimes divided crossways to make two.

Cotton classing is done by sight and touch. The grading is done primarily by the eye. The classer opens the sample two or more times along different layers and judges the grade by the lowest break in the sample. Character is judged largely by touch. If cotton appears strong, it is said to have good character; if it is weak and without uniformity of staple, it has poor character. Staple determination is a result of sight, feel, and actual measurement. It is done by parallelizing the fibers of the predominant length and then estimating or actually measuring them.

If the sample of a given bale of cotton does not match exactly any sample in the boxes representing the standards, the classer must use his judgment in deciding into which class to place the bale. If the character is good, he often puts it into the higher class if it is otherwise on the line between two grades; if the character is poor, it goes into the lower grade. Cotton from different parts of the belt and in different seasons presents a great variety of combinations of the grade-determining factors, so that fine distinctions must often be drawn, and great accuracy is required for successful classing. The technique is learned largely by actual classing under the supervision of skilled classers.

If the samples are made ready for the classer, under satisfactory conditions and with the proper facilities, a skilled classer can grade 1,000 bales or more a day. Most efficient and economical classing requires, therefore, that the cotton be assembled in fairly large lots.

### NUMBER OF TIMES COTTON IS CLASSED

Cotton is usually classed as many times as it changes ownership. The one who buys it from the farmer makes the first classification. The sample used may have been drawn by the gin, by the warehouseman, or by the buyer himself. The local buyer sells to a shipper, whose take-up man may sample and class the cotton before it leaves the primary market, or he may send it to his central warehouse and pay on the basis of class as determined there. In either case it is not necessary to sample the cotton more than once, though it may be done. Cotton is always classed at the central office, for it is at this point that the cotton is put up in even-running lots according to the firm's types, or according to universal standards for American cotton. The classing may be done on new samples or on the samples drawn by the take-up man.

After the shipper has classed his cotton into even-running bale lots of 50 or 100 bales, he makes up types representing those lots in stock and sends them to his customers. If he is a merchant who handles a great deal of cotton and has been in the business a long time, his types are well known to his customers and only a few samples to show the peculiar seasonal characteristics are sent.

Sales are made by merchants on the basis of the official cotton standards or on their private types. When the cotton is sold and shipped to a mill, it is again sampled by the mill classer to see that all bales are as good as or better than the type used as the basis of

the sale or transaction. If the buyer thinks that the cotton is not as good as represented, he may reject it or he may ask for money adjustments. The seller may pay all or a part of the reclamation demanded, or he may demand arbitration. The arbitrated cotton must again be sampled and classed unless both agree to have the arbitration on samples already drawn.

Merchants, shippers, and dealers buy and sell among themselves, and to the extent that this is done, it multiplies the number of times cotton is sampled and classed. When cotton is exported, it is sampled by the importer on arrival at destination. If the importer is a merchant, he in turn makes up sample types of his different lots of cotton for the use of his customers.

The large amount of sampling and classing of cotton is generally thought of as a great source of waste and expense. It is justified on the ground that it is less wasteful than attempting to sell unclassed cotton. Many schemes have been advocated for making one sampling suffice, but none so far has been able to accomplish the desired results. Some of the Southern States attempted to prevent excessive sampling by passing laws requiring that the bales be sampled at the gin before the covering is put on. It was found, however, that under the prevailing circumstances the enforcement of the law merely served to add one more to the number drawn because the purchaser refused to buy on a sample he did not draw. Neither the samples nor the pickings are wasted for they are baled. They constitute a big share of the so-called "city crop."

The Federal Government is endeavoring to devise a plan to make sampling and classing unnecessary each time a bale is sold. In the administration of the cotton futures act it is possible to class cotton at New York or New Orleans and buy and sell it without classing it each time, especially if it remains in the same warehouse, or if moved from one warehouse to another under Government supervision. Cotton which has been officially classed in New Orleans has been moved to New York under the supervision of the Government and delivered on contract without reclassification. The cotton standards act passed March 4, 1923, makes possible a much broader application of such a practice.

### COTTON CLASSING AND THE FARMER

Farmers are interested in cotton classing as a source of bargaining power in marketing and as an aid in improving the quality of their product. Farmers can not be efficient salesmen in disposing of their cotton until they know its class. They have depended too much on competition among buyers to make a fair price. American cotton growers compete in the world markets and can succeed best by growing a superior product and knowing the qualities of their product.

The United States Department of Agriculture undertook a few years ago to teach cotton farmers the significance of class as a market factor and how to improve the class of their cotton. As a result a great many farmers, and especially leaders, have learned the importance of grade, staple, and character of cotton in determining its value. They have also learned that it is impractical for them as individuals to learn to class cotton to the degree required for efficient

marketing; but that if farmers as a class are to have the benefit of such a service, they must pay to have it done. Many growers are doing this through cooperative associations.

### GOVERNMENT ACTIVITY IN COTTON CLASSING

The United States Government is now authorized to class cotton under the authority of four different acts. The cotton futures act provides that all cotton to be delivered in the settlement of future contracts must be classed by the Department of Agriculture. The department maintains a board of cotton classers at New York and one at New Orleans for this purpose. If the party at interest is dissatisfied with the class given, he may appeal and have the class reviewed. The class established by review is final for settlement of all future contracts, and the bale may be tendered any number of times without reclassification, as long as the rules for handling such cotton are observed. This classification has no legal force outside the futures market. This law gives the boards at New York and New Orleans, and a similar board at Washington, authority to class cotton for informative purposes. Those who contemplate delivering cotton that they consider barely passable, may wish such a preliminary classification before they ship the cotton. The fee for such service varies, but is usually about 30 cents a bale. The number of bales classed annually under the authority of this act is usually between 300,000 and 500,000.

The United States warehouse act passed in 1916 and amended in 1919 and 1923 provides, among other things, that if cotton is stored in a warehouse licensed under the act the class of the cotton must be shown on the receipt, or the words "Not graded on request of depositor" clearly stamped on the face of it. The act also provides for issuing licenses to competent persons to class cotton according to United States standards. If one of the interested parties is dissatisfied with the class placed on his cotton he may appeal to the chief of the Bureau of Agricultural Economics, or to a duly authorized cotton examiner or board, and the chief shall designate an examiner or board of examiners to settle the complaint.

There are two main purposes in classing cotton for warehousing: (1) To facilitate the financing of unsold cotton and (2) to provide a basis for insurance and for claims in case of loss.[10] Classifiers licensed under the United States warehouse act may or may not be licensed under the United States cotton standards act.

The United States cotton standards act passed in 1923 is designed in part to assist the cotton farmer in obtaining the correct classing of his cotton and to improve his position as a salesman. According to the provisions of this law, anyone who has custody of or financial interest in any cotton may submit the same or samples thereof, drawn in accordance with the regulations of the Secretary of Agriculture, for the determination of its class. To make the act more serviceable, the Secretary of Agriculture is empowered to license cotton classers who may in turn issue certificates of class on cotton.[11]

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[10] Regulation 4 of U. S. Dept. of Agr. Service and Regulatory Announcements No. 76, July, 1923.

[11] 42 Stat. L., p. 1517.

The regulations under the act as now drawn by the Secretary provide for three classes of certificates issued by a duly constituted board of cotton classers. The first, called Form A, is merely an informative memorandum, which states the class of the sample submitted. It is not and can not be made a final certificate in the sense that it becomes prima facie evidence in the courts. The typical Form A memorandum would be one issued to a holder of cotton who had submitted a sample for classification to a board of classers. If a cotton grower in the Southern States wishes a Form A memorandum, he may send his samples to the secretary of the board of cotton examiners at New Orleans and his cotton will be classed on the payment of the necessary fees. Citizens of other States may apply to the board in New York.

A Form B certificate is issued where two parties are in dispute as to the correct class of a sample that they agree is representative of the bale. The Form B certificate becomes final as between the parties concerned once it has been reviewed by the appeal board at Washington.

Form C certificates are issued only after the cotton is in an approved warehouse, and has been inspected and sampled under the supervision of agents of the Department of Agriculture or of some one approved by the department. When the classification has been reviewed it becomes a final certificate with standing as prima facie evidence in courts of the United States as long as the cotton is kept as provided for in the regulations.

The provisions of the act and the regulations under it are broad enough to cover all the requirements of an appeal board to settle all kinds of disputes involving the determination of the qualities of cotton according to the adopted standards or according to submitted types.[12]

The cotton standards act was soon found to have far-reaching consequences in the sale of American cotton abroad. The movement was started to adopt universal standards for American cotton, which were accepted as the official standards under the law.

To facilitate the settlement of disputes, the members of appeal committees of recognized foreign exchanges that have adopted the universal standards for American cotton have been designated by the Secretary of Agriculture as an appeal committee in the settlement of disputes between American shippers and foreign importers arising over the grade of American cotton when the dispute arises after the cotton has reached its foreign destination.

Though it is unlawful to sell cotton classed according to any other standard than the official cotton standards now known as the universal standards for American cotton, this does not preclude the use of private types where they are not used as a means of evading the law.

The Sixty-eighth Congress, in passing the appropriation bill of the Department of Agriculture for the year 1924–25, provided for the classification of cotton under the authority of shipping-point inspection. The law demands that the class established shall be prima facie evidence in courts of the United States as to the true

[12] U. S. Dept. Agr. Service and Regulatory Announcements No. 80, August, 1923.

classification of the cotton. There are many serious problems to be solved in working out ways of doing satisfactorily what is contemplated without too great expense.

## ASSEMBLING AND DISTRIBUTING

Cotton must be assembled from the farms and distributed to the mills, because large numbers of bales of "average receipts" cotton must be bought in order to classify it into even-running lots for mill consumption. It is impracticable for a cotton buyer to limit his purchases of cotton from the growers to specific grades. He buys every grade, staple, and character offered. A merchant's local representative may buy 10,000 bales before he is able to fill an order for 1,000 bales of Strict Middling of a prescribed staple length and of even-running character. Assembling is, therefore, a prerequisite of distribution to mills, and it makes transportation and carrying more economical. The service of assembling cotton may be performed by the people who distribute it to the mills or by others who confine their efforts to that service alone. Distribution involves all the services required in distributing the even-running lots of cotton throughout the world to the spinners requiring each specific kind of cotton.

### ASSEMBLING THE COTTON

Growers perform the first service in assembling cotton when they haul it to the gin and from the gin to the local or primary market. Local buyers meet the farmers in the primary markets and buy the individual bales or small lots as offered for sale. At the end of the day they sell their purchases to merchants or shippers on a basis previously agreed upon or, if they are salaried representatives, they report their purchases to the head office. The cotton is sent to the railroad platform, the local warehouse, or the open cotton yard. The necessary documents giving title to the cotton pass into the hands of the local banker. These necessary documents are checks or drafts attached to the warehouse receipts or yard tickets which show at least the weight of the bale and the price paid. The ticket is often drawn to serve the purpose of the check. The bank requires also an insurance policy covering all purchases.

The cotton is moved out of the local market by the cotton merchant's or shipper's take-up man. He visits the local market from time to time, makes a rough classification of the cotton bought by the local buyer, and makes arrangements to ship the cotton. If there is a compress in the town, the cotton goes there for compression. If it is a large center, well equipped and with proper railroad facilities, the merchant may make the place one of his concentration points. In that case he draws a sample and sends it with a coupon tag to the office in charge of shipments. The cotton is classed into even-running lots and stays there until sold and ordered out. The warehouse receipts and insurance policies are lodged with the banker furnishing the credit or a custodian designated by him.

If the local market is small, as most of them are, the cotton is taken from the local yard or warehouse, delivered to the railroad, and billed to the merchant's concentration point. The banker exchanges the local warehouse receipts for an invoice and order bill of lading. He

reimburses himself by attaching a draft to these documents and sends them to the designated banker in the central market for payment. The cotton will probably be compressed before it reaches concentration destination; and in case it is, the cost is either added to or included in the freight. When the cotton is delivered at the concentration point, the bills of lading are exchanged for warehouse receipts and insurance policies are attached. If a very high margin of credit is desired and the merchant is not very strong financially, the bank usually requires that all unsold cotton be hedged.

If the ownership of the cotton is changed when it is moved from the local to the central market, as is usually the case, the local banker draws a draft on the purchaser and attaches it to the bills of lading, invoice, and insurance certificate. These are sent through the bank's correspondents and may be sight or time drafts. When the draft is received and paid and the cotton has arrived, the banker holding the documents exchanges the bill of lading for a trust receipt to enable the buyer to claim and transfer the cotton from the cars into a warehouse, where he is given a warehouse receipt, which he returns to the bank and has the trust receipt canceled.

The merchant is required to pay the freight when the cotton reaches concentration destination; but when he sells the cotton, if he ships it out over the same road, he gets a rate based on through haul from point of origin. This means almost a total refund of concentration freight when the quantity of cotton going out over a road equals that which came in over it. Concentration freight charges are known as freight expense bills. The life of these bills may vary somewhat, but they usually run about one year.

Important services performed at the concentration warehouse are receiving the cotton, sampling, pressing, patching, conditioning, putting on missing bands, and weighing. The cotton is also tagged, marked, and branded in even-running lots for reshipment. The charges for rendering the different services varies from one warehouse to another.

### DISTRIBUTION

From the standpoint of marketing, cotton is distributed both in time and space. Time has to do with the rate at which it is moved toward consumption, and space relates to the parceling of the cotton to the various users of cotton wherever situated in the world.

Time distribution is an attempt to even demand and supply conditions of one season with another on the basis of costs and anticipated prices. It is preeminently the field of speculation, because of changes in demand and supply of actual cotton or of anticipated supply. The cotton merchant is continually confronted with the problem of time distribution. Cotton may be moved out of concentration warehouses as quickly as it is classed or it may stay there indefinitely. The merchant usually accumulates considerable cotton that he has not previously sold. These purchases are hedged in some distant month, and if he has not sold the cotton before that time, he may deliver it on the future contracts sold against it. During times of high prices and uncertain business conditions, he is forced to sell his cotton out in small lots spread more or less throughout the year. When the merchant is thus carrying unplaced cotton, he is compelled by the bank not to allow storage, insurance, and handling charges to

accumulate unduly. If for any reason the price margin becomes endangered, the merchant must make it good.

Successful distribution in space, in so far as price is concerned, is essentially a problem of bargaining ability and advantageous contacts. Cotton does comparatively little excessive traveling. The custom is to leave it in the original concentration place until it starts definitely toward its final destination, though ownership may pass through several hands.

### TERMS USED IN THE MOVEMENT OF COTTON

The movement of the cotton proceeds according to certain well-defined terms, whether it is for domestic consumption or for export. If the destination is domestic and does not involve ocean freight, it is sold and shipped on f. o. b. terms. It is usually either f. o. b. point of origin or of destination, though other terms are quoted. If the price is quoted f. o. b. (named point of origin) the seller must (1) place the goods in the cars, (2) procure bill of lading, and (3) be responsible for loss until the cotton is placed in cars. The buyer is responsible thereafter for (1) damage, (2) all transportation costs, and (3) all subsequent movements and charges.

If the cotton is sold f. o. b. destination (named point) the seller must (1) place the cotton in cars, (2) procure bill of lading, (3) pay the freight to named point, and (4) be responsible for loss until the goods have been placed in the cars and a clean bill of lading obtained. The buyer must (1) be responsible for loss thereafter, (2) handle all subsequent movements, (3) unload cars, and (4) pay all demurrage and storage.

If the seller wishes to quote a price on cotton free alongside overseas vessel and within reach of its loading tackle, the terms are f. a. s. vessel (named port). In this case the seller (1) transports goods to seaboard, (2) stores goods in warehouse or on wharf, unless the buyer's obligation includes provision of shipping facilities, (3) places goods alongside of vessel, (4) provides the usual dock receipt or ship's receipt, and (5) is responsible for loss until goods are delivered alongside ship. The buyer must (1) be responsible thereafter for damage and insurance, and (2) handle all subsequent movements.

Some of the other terms used in making cotton shipments are f. o. b. cars (named point of destination); f. o. b. cars (named point of destination), lighterage free; and f. o. b. vessel (named port).[13]

If the seller of cotton quotes the price in terms of foreign point delivery, they are either c. and f. (named foreign port), c. i. f. (named foreign port), or c. i. f. (named foreign port) and 6 per cent which is designated "*c. i. f. and 6 per cent* terms," which means cost, freight, insurance on the gross weight less 6 per cent. In the first case the seller must (1) make freight contract and pay cost of transportation; (2) deliver to buyer a clear bill of lading; and (3) be responsible for loss and for damage until goods are delivered alongside of ship, and a clean bill of lading is obtained. The buyer must (1) be responsible for all subsequent loss and/or damage, (2) handle subequent movements, (3) take and pay all costs of delivery, and (4) pay foreign customs duties. In the second case the con-

[13] For further discussion of these terms, see American Foreign Trade Definitions as published by the National Foreign Trade Council, India House, Hanover Square, New York.

tract is the same as the first except that the seller must provide the insurance policy and deliver it and/or negotiable insurance certificates to the buyer, and provide, if necessary, war risk insurance for buyer's account. The buyer is responsible for the collection of all insurance claims. The actual tare is determined in the third case according to the rules of the foreign market.

#### FREIGHT BROKERS

The sale of freight room on ocean-going vessels is made by brokers who are located at the important ports and at interior markets whose merchants do a large export business. As a rule they not only sell freight room but render a number of other services, such as tracing shipments, looking after freight and wharfage charges, sampling, compression, and the execution of the proper documents in making shipments. The brokerage charge amounts to only about 5 cents per bale, although other expenses may run considerably higher, depending on the service performed. The firms are usually styled freight contractors and forwarding agents.

#### MONEY TRANSACTIONS

The payment for the cotton goes through different channels and proceeds more rapidly than does the actual cotton. Most sales are made by telephone, telegraph, or cable. Such agreements are followed by letters of confirmation, which repeat the terms of sale, or write out in detail that which was given in code.[14]

When the seller has complied with his part of the contract the money transaction is much like that if the ownership changes between local and central market. The seller attaches a draft to the bill of lading, invoice, and insurance policy (if he carries the insurance), and presents the papers to the bank. If it is a domestic shipment, the seller is credited with the face value less certain charges for making the collection. The papers are immediately forwarded to the banker's correspondent at the point of destination. The buyer honors the draft and it is paid. The bank holds the documents as security, if payment is made on the basis of a credit arrangement. When the cotton arrives, the buyer must have the bill of lading to claim the cotton, so he deposits a trust receipt with the bank until he can have the cotton delivered into a warehouse and can procure warehouse receipts, which are in turn deposited at the bank.

If the sale has a foreign destination and is in terms of foreign money, the seller draws his draft and sells it for the best price he can get. Such drafts or bills of exchange, as they are more frequently called, are usually drawn for a period of from 30 to 90 days. There are banks which specialize in buying and selling such paper. They are called foreign-exchange brokers.

#### CONTROLLERS

When exported cotton arrives at the foreign port, it is weighed, tared, and classed. If an American merchant without a foreign office is selling to a foreign merchant, the American obtains the services of a controller, who looks after his interests in weighing, taring,

[14] For illustration see Miller, T. S., cotton trade guide and student's manual, Austin, Tex., 1923, pp. 276–278.

and classing the cotton. If there are rejections or arbitrations, he attends to these and performs any other service required in handling the cotton.

## WAREHOUSING

Warehousing is an essential function in efficient cotton marketing. The services performed are: (1) Physical protection of cotton, (2) converting of receipts for stored cotton into desirable collateral, and (3) efficient movement of cotton through marketing channels.

Cotton requires physical protection from weather, mud, dust, fire, from mutilation and petty picking, and from theft and "tag switching." "Country damage" grows out of the lack of the protection afforded by the warehouse.

The conversion of the title to cotton into desirable collateral for loans is an important service. It enables the grower to obtain a substantial advance on his cotton and makes possible a policy of gradual marketing. The buyers, merchants, and shippers are enabled to conduct a much larger business on a given amount of capital, and this tempts them to buy the farmer's cotton more freely.

The considerations which determine the value of warehouse receipts are: (1) The structure and location of the warehouse,[15] (2) the facts set forth on the receipt, (3) the kind and amount of supervision received from disinterested parties, (4) the net free assets of the company, (5) the size and nature of the bond furnished, (6) the kind and amount of insurance carried on the cotton in the warehouse, and (7) the integrity and standing of the officials responsible for the operation of the warehouse.

There is such a wide difference between the values of individual bales of cotton that a receipt calling merely for a bale of cotton is of indefinite value. The most desirable receipt shows the grade and staple of the cotton, its condition, the weight of the bale, the tag number of the bale, by whom the cotton has been classed, whether the cotton is insured, and a statement as to the negotiability of the receipt.

The paper upon which the receipts are written and the way they are marked and issued should be designed to make the counterfeiting of receipts extremely difficult. The United States Department of Agriculture has worked out a plan which tends to throw around the Federal warehouse receipt restrictions similar to those observed in the issuance of bank notes.

Just as inspection has given confidence in national banks, so proper supervision and inspections strengthens confidence in warehouse receipts. Inspection by a disinterested Government official has demonstrated its value, and many banks are insisting upon a Federal receipt.

A knowledge of the value of the net free assets of the company operating the warehouse is important, especially if the receipt is to be used at distant points. A periodic statement of the assets and liabilities add much to the standing of a warehouse company.

Insurance to cover the cotton in the warehouse, based on the class and weight shown on the receipt and on the daily market price is usually required when receipts are offered as security for loans. The

[15] For a discussion of construction and location of warehouses, see U. S. Dept. Agr. Bul. No. 801, 1919.

policy on the cotton may be carried either by the warehouseman or the owner, but when a loan is desired the banker's conditions must be met. In the small country warehouse it is frequently carried by the warehouseman and paid for as a part of the warehouse charge. The cotton merchants and the large cooperatives carry their own insurance on their cotton, because they can obtain better rates and a policy broader in scope.

Warehouses play an important part in the movement of cotton. The large warehouses serve as a kind of sorting place for the "hog-round" or "lot-through" cotton bought by the merchant. This sorting at concentration points is accomplished without increasing the freight costs, since cotton is shipped to such points with reshipment privileges. This permits the cotton to be transported to destination at a through rate from point of origin.

In markets where cotton is tendered for delivery against future contracts, a proper system of warehouse supervision and inspection adds greatly to the value of the contract and facilitates a freer movement. The improved system of warehousing, coupled with a better cotton classing service and means of identification of bales, is doing much to eliminate waste and shorten the marketing route.

### NUMBER AND SPACE

Figures as to the number and capacity of cotton warehouses in the South are not available. Published estimates in 1914 (Table 4) indicated that there is ample warehouse space but that much is poorly located. In normal times warehouse space in the South equal to one-third the crop is ample. The warehouse space demanded in the different months of the year for the storage of cotton is indicated by Table 5, and by Figure 7, which shows the relation of warehouse space used in Arkansas to total warehouse space available.

TABLE 4.—*Comparison between estimated storage capacity of all warehouses in the Cotton Belt for season beginning August, 1914, and cotton production, 1913* [1]

| State | Warehouses | Storage capacity | | | Production, 1913 [2] |
|---|---|---|---|---|---|
| | | Flat | As offered | Compressed | |
| | *Number* | *Bales* | *Bales* | *Bales* | *Running bales* |
| Alabama | 581 | 1,628,935 | 1,884,355 | 2,741,530 | 1,483,669 |
| Arkansas | 233 | 714,780 | 965,800 | 1,017,500 | 1,038,293 |
| Florida | 51 | 225,060 | 357,830 | 380,270 | 66,700 |
| Georgia | 1,089 | 1,354,810 | 1,693,280 | 2,274,866 | 2,346,237 |
| Louisiana | 200 | 809,600 | 1,095,930 | 1,260,490 | 436,865 |
| Mississippi | 167 | 892,540 | 1,525,810 | 1,665,840 | 1,251,841 |
| North Carolina | 149 | 210,216 | 264,446 | 366,141 | 837,995 |
| Oklahoma | 120 | 540,600 | 842,330 | 927,845 | 842,499 |
| South Carolina | 337 | 1,156,760 | 1,363,560 | 1,887,380 | 1,418,704 |
| Tennessee | 31 | 582,285 | 919,435 | 935,011 | 366,786 |
| Texas | 497 | 1,946,494 | 2,513,324 | 3,531,770 | 3,773,024 |
| Virginia | 30 | 219,890 | 316,580 | 329,065 | 24,569 |
| All others | | | | | 95,629 |
| Total | 3,485 | 10,281,970 | 13,742,680 | 17,317,708 | 13,982,811 |

Figures quoted from U. S. Dept. Agr. Bul. No. 216, Cotton Warehouses, 1915, p. 16.

[1] Estimates for 1914 were computed on the basis of a 10 per cent increase in the number of warehouses and total storage capacity over the estimates for the season 1913.

[2] Compiled from reports of the Bureau of the Census.

TABLE 5.—*Cotton in public storage: maximum, minimum, and 4-year average, as reported on the first of the month, August, 1919 to July, 1923*

| First of month | Maximum in 4-year period | Minimum in 4-year period | 4-year average |
|---|---|---|---|
| | *Running bales* | *Running bales* | *Running bales* |
| August | 3,463,964 | 1,530,141 | 2,193,791 |
| September | 4,312,135 | 2,502,307 | 3,207,430 |
| October | 4,984,831 | 3,687,141 | 4,273,014 |
| November | 5,292,941 | 4,063,176 | 4,663,762 |
| December | 5,623,646 | 4,069,470 | 4,765,997 |
| January | 5,645,482 | 3,485,952 | 4,377,868 |
| February | 5,503,139 | 2,803,304 | 4,012,990 |
| March | 5,252,852 | 2,379,697 | 3,656,251 |
| April | 5,026,894 | 1,965,714 | 3,296,062 |
| May | 4,738,267 | 1,580,219 | 2,866,201 |
| June | 4,300,386 | 1,227,184 | 2,445,516 |
| July | 3,723,213 | 938,903 | 2,051,324 |

Compiled from Dept. of Com. Bul., No. 153, Cotton Production and Distribution.

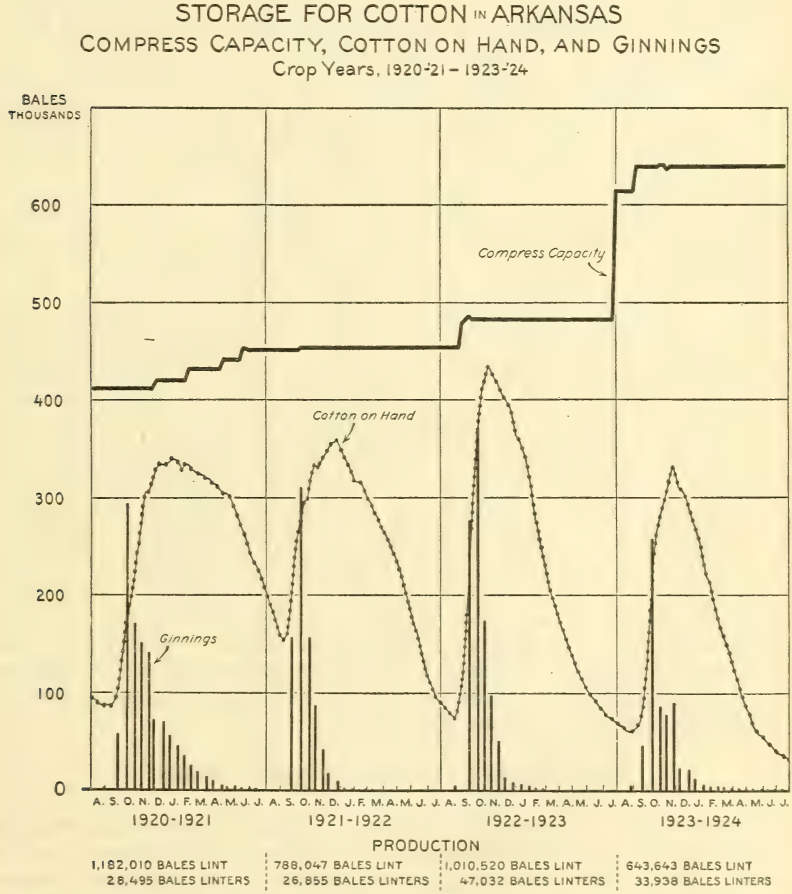


FIG. 7.—This graph shows the relation of warehouse space used to total warehouse space available in Arkansas. Data on "cotton on hand" and on "compress capacity" are from Arkansas Cotton Traders' Association weekly reports and are for compress warehouses only. Data on ginnings and production are from the reports of the Bureau of the Census

### LOCATION

Location of warehouses is important in efficient handling of cotton and in financing. If growers are unorganized or have only a community organization and plan to sell their cotton to local buyers, then the local warehouses will best serve their needs. If the organization is State-wide or regional and plans to sell even-running cotton, the cotton must be concentrated in comparatively few centrally located warehouses in order to make proper claims on freight bills and to class and ship the cotton efficiently. The number required for efficient operation depends upon the ultimate destination of the cotton, railroad directions, and tariff rates.

### WAREHOUSE LEGISLATION

Cotton warehouse legislation is of comparatively recent origin. The United States warehouse act was passed in 1916, and has been amended twice. The law provides, among other things, for the investigation and classification of warehouses, the licensing and bonding of warehousemen, the making of regulations governing the operation of the licensed warehousese and the issuance of receipts, the making or adopting of standards for classification of commodities, the licensing of cotton samplers, classifiers, and weighers, the inspection of the licensed warehouses and of the licensed classifiers' work, and finally for reports and for revocation of licenses.

The States have taken considerable interest in such legislation. All the important cotton-growing States have some warehouse regulation and supervision. In a general way the legislation is similar. Some States have certain distinctive features. In North Carolina the State leases all warehouses, carries all insurance, fixes the bonds, and originally it levied a tax on all cotton ginned, which made up a guaranty fund serving a purpose in warehousing, similar to that of a bank guaranty fund for State banks.[16] South Carolina has a system of State warehouses leased from the owners, over which it exercises supervision. The State warehouse commissioner appoints the managers. The law provides especially for licensing warehouses located on farms.[17] In 1922 there were in South Carolina over 1,200 State warehouses that stored some cotton. It should be borne in mind that a large percentage of these so-called warehouses are not warehouses in the sense that they were originally constructed for use as such, but are really barns, sheds, or garages in which small quantities of cotton are temporarily stored. The total quantity of cotton stored in these 1,200 State warehouses in 1922 was about 356,000 bales, the least number in any one warehouse being 1 bale and the greatest number 2,576 bales.

## INSPECTION AND REGULATORY WORK

The importance of inspection service in marketing varies with the commodity, the prevailing market machinery, and the extent of the market. Inspection service may be provided by private business

[16] The North Carolina Warehouse System, issued by State board of agriculture, Raleigh.
[17] An act of the General Assembly of the State of South Carolina, No. 436, approved 1921.

organizations independently or under supervision, by municipalities, by a State, or by the National Government.

#### FUNCTIONS

The functions of inspection service are: (1) To give the distant buyer confidence in the seller's statements of quality and quantity of product and (2) to assure the owner that the commodity, and his rights in it, are fairly protected when it gets beyond his immediate supervision. Incidentally it tends to break up sharp practice, but its primary object is to broaden the market for each individual who wishes to buy and sell.

The first function can best be performed when the standards for measurement are uniform throughout the world and are well known. The adoption of universal standards for American cotton, coupled with a high-class inspection service, should in time eliminate much of the expense of marketing. A Federal inspection service is being worked out for the state-wide cooperative marketing associations at their request. As a prerequisite they are having their cotton classers licensed under the cotton standards act. They put up their even-running lots according to the universal standards, and the Federal Government in turn sends out an expert cotton classer to see that the cotton is properly classed.

The second function of inspection service for cotton marketing was organized in the larger importing and exporting markets, such as Liverpool, New Orleans, and New York. It was instituted to serve primarily the members of the exchange and the clients from whom they bought cotton, but under prescribed conditions others might use it. As the business has expanded the value and public nature of the service has become more clearly recognized and the service has been expanded from time to time. The main function of the service as it now exists is to see that the cotton as it arrives is in good merchantable condition, that it is properly weighed and sampled, and that it is rightly handled otherwise. The inspection bureau which ordinarily performs such service is usually composed of an inspector in chief and two or more members. They serve the members of the local exchange primarily, but outside parties may obtain their services by paying the customary fee. Prescribed rules govern the inspection service provided by the exchanges.

#### SERVICES

The service of the inspection bureau may be obtained in making any sort of cotton-marketing transaction permitted by the constitution and by-laws of the exchange. The object is to provide expert service at a minimum cost and of a character above reproach.

The working out and establishing by the United States Government of official standards for the classification of American cotton laid the foundation for many improvements in cotton-marketing methods, such as providing a basis for a wide-spread price quotation service and more equitable means of settling disputes.

The cotton standards act is largely a service act, though it contains important regulatory features. The establishment of the official cotton standards as universal standards has gone a long way toward lessening the importance attached to the regulatory features

and has cleared the ground for developing the service features. The outstanding service contemplated is that of supplying expert service in classification of American cotton, or inspection of such classification, and is provided for in section 4 of the act.

Inspection service has developed in the performance of most of the steps in cotton marketing. Ginning, for instance, is a technical process, and bad service can rarely be detected by the cotton grower and sometimes not by the ginner himself. Oklahoma has a statewide gin inspection service.

Formerly there was a great deal of cotton thieving by what is known as "tag switching," especially on compress and warehouse platforms. Individual bales were identified largely by card tags wired to the bagging. Warehouse licensing and inspection services inaugurated since 1916, where more responsibility is put on the warehouseman, is tending to eliminate the serious evil of switching tags from good bales to poor ones.

Bankers are requiring more efficient inspection service before making loans on cotton. It is not enough for the banker to know that there is a bale of cotton in the warehouse back of the loan he has made. He must know the weight and quality of such bale and that it is adequately protected from both physical damage and theft. This type of service must be performed by those technically competent to report on all risks, and such reports should be made periodically to all concerned.[18]

### REGULATORY WORK

Regulatory measures may originate in trade organizations or in some Government unit. The function of regulation may be to prevent undesirable practices or to encourage practices conducive to general welfare. Regulatory legislation is usually in the direction of standardization and simplification, whether in private or governmental bodies. Generally, regulatory measures are resorted to after all other methods fail to accomplish the desired ends.

Regulatory service is playing an increasingly important rôle in cotton marketing. The several cotton exchanges fix certain rules for the conduct of their business, not only between members but between members of their organizations and the nonmembers with whom they deal.

The trade regulations of one group may come to be regarded as detrimental to other interests in the trade itself or to the interests of the general public. Prior to 1914 there had been a growing discontent with the rules governing the operation of exchanges dealing in cotton futures. As a result Congress set aside certain old rules which had grown up in the trade and prescribed certain others for the conduct of the business. The opinion is almost unanimous among all branches of the cotton trade that the cotton futures act is constructive and is rendering a valuable service.[19]

The regulation of railroad transportation and railroad freight rates may affect the marketing of cotton. Regulations relating to cotton warehouses and warehousing and of compresses and com-

[18] Federal Reserve Board. Financing the Production and Distribution of Cotton, 1923.
[19] For further details see U. S. Dept. Agr. Cir. No. 159, Regulations of the Secretary of Agriculture under the United States cotton futures act.

pressing have their effect on cotton marketing. The tariff and other rules governing the importation of cotton may greatly affect the industry or a part of it.

With the multiplicity of pests affecting the growing of cotton, Congress deemed it desirable to have stringent laws governing the fumigation of raw cotton or cotton waste. A cotton merchant, for example, who is importing types of cotton, or is receiving returning types which he has previously sent out, must receive such cotton through fumigation plants established at certain ports for the purpose.

Satisfactory regulatory measures must supply needs that can not well be served otherwise. They must be definite, easily understood, and fair. They must be enforced impartially and intelligently.

## FINANCING COTTON MARKETING

Credit is an important factor in the production and marketing of cotton. It is required for the processing and moving of cotton through the channels of trade and in carrying supplies from season to season.

### FINANCING THE PROCESSING AND MOVEMENT

The movement of cotton requires two types of financing. The first relates to the financing of ginning, transporting, classing, and warehousing. Lack of adequate finance to build and equip the plants may affect seriously the efficiency of cotton marketing. The readiness with which finances may be obtained to build gins, warehouses, and compresses depends more on business conditions in general than on conditions in the cotton industry alone.

In most cases the ginner buys the cottonseed from the farmer. The value of the seed varies greatly, but runs from about $15 for the 1,000 pounds to as high as $25 or $30. The cost of ginning a bale may be as low as $4 in one section and as high as $8 in another. The seed more than pays for the cost of ginning, but if the farmer does not sell the seed he must pay the ginning costs in some other way. The ginner may grant credit until the cotton is sold, or the farmer may borrow the money if he does not have it and can get credit.

Gin and warehouse services are usually paid for in cash on the spot, though payment is not always required until the cotton is sold.

From the time the cotton leaves the farmer's hands in the local market the costs of performing the necessary services are paid directly by either the buyer or the seller. Freight must be paid at the time cotton is billed or immediately upon arrival, but insurance premiums are usually required in advance. Storage may be paid in advance, monthly, or at the time the cotton is sold. Such charges are customarily paid out of money borrowed on cotton.

### FINANCING THE PURCHASE

The amount of money required to finance the purchase of cotton is large. The crop of 1923 sold for about $1,500,000,000. The length of time required to deliver cotton from the local market to the

spinner depends on many things. If spinners have bought heavily for early fall months' delivery, the first ginnings move as rapidly as they can be classed, assembled in even-running lots, and billed out. Such shipments may be made within 10 days after the cotton is ginned. Later in the fall, when there are many grades, it may take as much as 75 days to make up lots of the scarcer grades and deliver them to distant markets.

### FINANCING COTTON STOCKS

About 80 to 90 per cent of the American crop is harvested within the three months, September, October, and November. It is consumed in fairly uniform quantities throughout the year. The visible supplies are the quantities of cotton on hand in trade, and they indicate the amount of money tied up on cotton pending mill consumption.

TABLE 6.—*Quantity, price, and value of world's visible supply of American cotton, by months, August, 1919–July, 1923*

| Month and year | Visible supply | Price per pound | Approximate value | Month and year | Visible supply | Price per pound | Approximate value |
|---|---|---|---|---|---|---|---|
| | *Thousand bales* | *Cents* | *Million dollars* | | *Thousand bales* | *Cents* | *Million dollars* |
| 1919–20: | | | | 1920–21: | | | |
| August | 2,905 | 31.50 | 437 | August | 2,624 | 34.78 | 436 |
| September | 2,780 | 30.33 | 403 | September | 2,764 | 28.25 | 373 |
| October | 3,497 | 35.39 | 592 | October | 3,519 | 21.38 | 360 |
| November | 4,231 | 39.60 | 801 | November | 4,273 | 17.84 | 364 |
| December | 4,609 | 39.73 | 875 | December | 4,846 | 14.63 | 339 |
| January | 4,722 | 40.46 | 913 | January | 4,822 | 14.05 | 324 |
| February | 4,840 | 39.49 | 914 | February | 4,707 | 12.97 | 292 |
| March | 4,543 | 40.63 | 882 | March | 4,473 | 11.19 | 239 |
| April | 4,315 | 41.73 | 861 | April | 4,434 | 11.01 | 233 |
| May | 4,002 | 41.02 | 785 | May | 4,512 | 11.55 | 249 |
| June | 3,414 | 40.59 | 662 | June | 4,454 | 11.16 | 238 |
| July | 2,933 | 39.59 | 555 | July | 4,108 | 11.14 | 219 |

The visible supply is that reported by the New York Commercial and Financial Chronicle for the last of the month The value is obtained by multiplying the supply by the average price for the month in 10 spot markets, considering bales as averaging 478 pounds net.

The bulk of the visible suply is in the hands of cotton buyers, largely in the centralizing markets. The banks in these markets and in the large financial centers furnish most of the money. Warehouse receipts for classed and hedged cotton constitute the collateral for the loans. A large part of these loans is in the form of bankers' acceptances running from 30 to 90 days, though some of the indebtedness is carried in the form of call loans. The security is considered equal to prime commercial paper and bears a low rate of interest.

### METHODS OF FINANCING THE GROWING OF THE COTTON CROP AFFECT METHODS OF MARKETING

Credit plays an important part in the growing of cotton. According to a study made by the Federal Reserve Board,[20] more than $500,000,000 is advanced to produce a 10,000,000 bale crop the monetary value of which is about $1,000,000,000. The advancement of this credit begins in the late winter and increases as the spring and sum-

[20] United States Federal Reserve Board. Financing the Production and Distribution of Cotton. 1923. p. 15.

mer advance. A considerable part of this credit is procured by liens on the crop.

Before the Civil War cotton was grown chiefly on large plantations and was financed to a large extent by the factors who sold it. Advances were furnished both in plantation supplies and in cash. The war left the planters little in addition to their lands, and these were, in many cases, heavily mortgaged. With the high prices of cotton then prevailing, creditors were readily found who would make liberal advances to the planters for reequipping their plantations and hiring their former slaves to grow cotton. The necessary equipment was bought at war prices, and the unorganized negro labor was found to be unreliable and expensive. On the other hand, the price of cotton declined from an average of 83.4 cents per pound in 1864 to 11.7 cents in 1876. For a long series of years, therefore, the cotton grower found himself in the unhappy position of being forced to pay loans on a lower price level than prevailed when he borrowed the money. Under these conditions the creditors determined the number of acres to be planted to cotton and the time the cotton was to be sold.

The spread of the cotton-growing territory into regions where growing of cotton is largely on family-sized farms, the extension of railroads, and the development of interior town markets weakened the hold of the factor and for a time threw the burden of financing the growing of cotton on supply merchants, especially in the newer cotton-producing regions, which in turn got their supplies from the port or factor towns. The merchant granted credit on the basis of acres planted to cotton and insisted that the cotton be delivered as ginned.

The relations between the old factor and the planters were personal, and credit was based largely on confidence. The supply merchants often followed the same policy and gave credit where it was not deserved. As a result it became necessary to charge wide margins of profit on supplies to make up for losses caused by bad debts. Thus the control of credit enabled cotton factors and the supply merchants to control the first stages of cotton marketing.

Beginning about 1900 the trend of the price of cotton has been steadily upward (fig. 8). Parallel with the upward trend in prices of cotton the grower has become less and less dependent upon merchants and factors for credit and has obtained more of his credit accommodations through banks.

The creation of the Federal reserve banking system, Federal land banks, and the intermediate credits banks, and the more liberal attitude manifested toward farm paper have aided the banker in financing the crop. The advent of the boll weevil since 1900 has tended to make the mere crop mortgage too risky unless joined with chattels or personal indorsement. When paper is thus properly secured, it is in much demand by the bank. The high cost and lack of buying freedom of store credit is driving much of this business to the banks.

### FINANCING COTTON OUT OF GROWERS' HANDS

The opportunities for converting production loans into so-called marketing loans secured by warehouse receipts are being greatly

improved. The intermediate credit corporations, organized under the authority of the agricultural credits act, in some of the cotton-growing States have arranged to make their collection of production loans through the cooperative marketing associations. Some of the commercial banks are doing the same thing. This practice not only simplifies the problem of the bank of converting one type of credit into another but it also simplifies the collection problem, for the association agrees to make the distribution prescribed by the interested parties.

### FINANCING THE MANUFACTURER

The manufacturer relies largely on the warehouse receipt to finance his stock of raw cotton. It is the policy of most mills to carry at

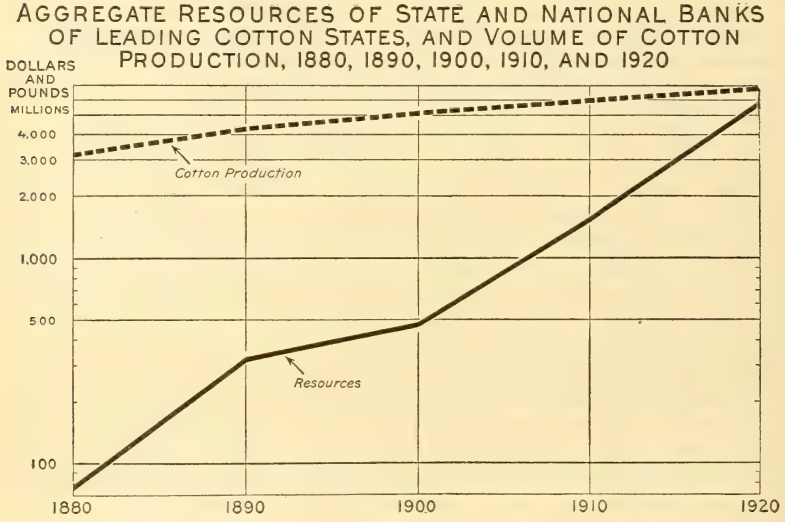


FIG. 8.—Comparative increase in volume of cotton production and of bank resources in the cotton-producing States. Production figures are compiled from the reports of the Bureau of the Census. Bank resources are those reported in the Federal Reserve Bulletin of March, 1923

least eight weeks' supplies in their warehouses. The normal mill stocks for the mills of the United States are a little over 1,000,000 bales.

The sale of dry goods is usually made on the basis of 30 to 90 days' credit. The usual time granted in New England is 70 days. The mill may get the selling agency to carry the customer or guarantee the account, but it must pay for it. When the mill has sold its goods for forward delivery, the problems of financing its operation are comparatively simple, but should it run into a slack season and have to make stock, the funds tied up in raw cotton and unsold cotton goods may become dangerously large and a considerable item of expense.

Some mills prefer to buy their cotton in large quantities early in the season. A few such mills buy outright and hedge it, but more

frequently they buy for forward delivery according to their estimated requirements. In the first instance the mill has the responsibility of financing the raw cotton. In the second case the merchant carries it. Where the cotton merchants wish to cooperate in financing the mill's stock of cotton, they make use of the sales note. It is drawn by the buyer in favor of the seller of the cotton and, when indorsed by the seller and accompanied by the warehouse receipts, is readily discountable. The bank surrenders the warehouse receipts to the mill as it uses and pays for the cotton.

Figure 9 shows monthly mill stocks of cotton and their estimated value for three consecutive crop years.

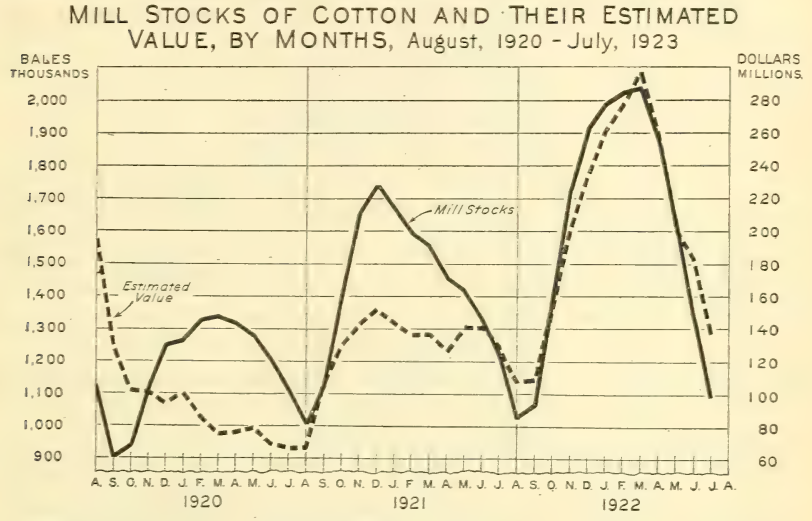


FIG. 9.—Volume and estimated value of stocks held by mills from month to month during three consecutive seasons. The mill stocks are from the reports of the Bureau of the Census. The value is obtained by multiplying the stocks by the average spot price of Middling in New York for the month, considering bales as averaging 478 pounds net

### TYPES OF MARKET INFORMATION AND THEIR SOURCES

Cotton-market information consists of those facts which are calculated to enable those interested in the cotton market to act intelligently. These facts may be classified as relating to (1) demand, (2) supply, (3) prices, (4) functions and relationships of the markets, (5) personnel of buyers and sellers, (6) cotton-handling methods and facilities, (7) finances, and (8) insurance.

An agency of information may originate the information, or may dispense it, or the same agency may perform both services.

Cotton-market information should be as nearly world-wide as possible. The farmer who judges the world's supply from the standpoint of his own field, State, or even Nation, may be grossly misled. The same is true with regard to demand, or any of the other groups of factors.

TABLE 7.—*Agencies of market information and data supplied*

| Source of information | Data | Publication |
|---|---|---|
| United States Government: | | |
| Department of Agriculture | Estimates of acreage, labor supply, and fertilizer sales in Cotton Belt. Forecasts of production, weather forecast. Estimates of production, average production per acre, percentage reduction in yield due to different factors, estimated monthly marketings, farm prices, monthly stocks of Government-classed cotton, value of crop, world production. | Releases.<br>Crops and Markets (weekly and monthly).<br>Yearbook.<br>Weekly Weather Review. |
| Department of Commerce | Ginnings, carryover, world production of commercial cotton, production of linters, imports by countries, exports by countries, stocks in public warehouses and in consuming establishments, and average weight of bales. Consumption of cotton and linters by American mills, number and location of cotton spindles, import and export of manufactured cotton, and world's cotton spindles. | Releases.<br>Cotton production and distribution. |
| | Stocks of dry goods, billings, unfilled orders. | Survey of Current Business (monthly). |
| | Products made from cotton, value of machinery, laborers employed and value of output. | Census reports of manufactures. |
| Federal Reserve Board | Indexes of business conditions | Federal Reserve Bulletin (monthly). |
| Department of Labor | Index numbers of wholesale prices | Labor Review (monthly). |
| Private sources: | | |
| New York Commercial and Financial Chronicle. | Into sight movement, spinners' takings, weekly exports, interior town movement, port stocks, visible supply, and overland movement. | New York Commercial and Financial Chronicle (weekly and annual summary). |
| New Orleans Cotton Exchange. | Similar to that reported by the New York Commercial and Financial Chronicle. In addition, certified stocks, grade of crop, and value of crop. | New Orleans Cotton Exchange Market Report (daily, and annual summary). |
| New York Cotton Exchange | Similar to that reported by the New Orleans Cotton Exchange. | New York Cotton Exchange Market Report (daily and annual report). |
| Liverpool Cotton Association. | Prices, stocks, mill takings, and movement of American and other cottons. | Liverpool Cotton Association Report (daily, weekly, annually). |
| International Institute of Agriculture. Rome, Italy. | World acreage, world production | The Cotton-growing Countries. Production and Trade. |
| International Federation of Master Cotton Spinners' and Manufacturers' Associations, Manchester, England. | World consumption by countries, world spindles, world supplies, articles, and miscellaneous statistics. | International Cotton Bulletin. |
| Journal of Commerce, and Commercial Bulletin, New York. | Money rates, stocks and bond sales and prices, trade activity. | Journal of Commerce and Commercial Bulletin (daily). |
| R. G. Dun & Co | Index of business | Dun's Review. |
| The Bradstreet Co | Index of business | Bradstreet's. |
| Iron Age Publishing Co | Machinery | Iron Age. |

SOME VALUABLE COMPILATIONS OF COTTON STATISTICS

| Source of information | Publication |
|---|---|
| National Association of Cotton Manufacturers, Boston | Yearbook. |
| Shepperson Publishing Co., New York | Cotton Facts. |
| Comtelburo (Ltd.), London, Liverpool, and New York | Annual Cotton Handbook. |
| Chas. B. Griffith, New Orleans | Cotton Yearbook. |

## PRICES

The primary function of price quotation service is to give the buyer a chance to obtain his cotton in the cheapest market and the seller a chance to sell or bargain in the highest market. It is the

best protection available against malpractices by shrewd buyers or sellers who may happen to have more information about prices in different markets than the persons with whom they trade.

The most significant figures on prices are those for (1) futures, (2) spots in the 10 designated markets, (3) spots at interior points, (4) spots at spinners' markets, (5) premiums and discounts being paid for grades above and below Middling, (6) premiums for a staple length, and (7) the basis or parity between spots and futures.

TABLE 8.—*Sources of cotton prices, the data, and the publications in which they appear*

| Sources | Data | Publication |
|---|---|---|
| United States Government: | | |
| Department of Agriculture | Average prices in 10 designated markets, premiums for grade and staple and the "basis." | Crops and Markets (weekly). |
| Department of Commerce | Prices of textiles and textile indexes | Survey of Current Business (monthly). |
| Department of Labor | Index numbers of wholesale prices | Labor Review (monthly). |
| Private: | | |
| Futures exchanges | All changes in futures prices | Market Reports (daily and annually). |
| New Bedford Standard | Prices of cotton, yarn, and cloth | New Bedford Standard (daily, especially Sunday). |
| Manchester Guardian | do | Manchester Guardian (daily). |

### FUNCTIONS AND RELATIONSHIPS OF THE MARKETS

Each of the different types of markets except the local has a body of rules which governs transactions in it. In formation regarding any given market may usually be obtained by application to the superintendent of that market if in the United States or to the secretary if in Europe. All important exchanges publish constitutions and by-laws and rules. There are also useful books and Government publications on the subject.

### BUYERS AND SELLERS

The publication of personnel information regarding mill buyers, dealers, cotton merchants, futures brokers, insurance brokers, cotton controllers, and exporters, their location, type of business, and address, is being rather thoroughly covered by directories applying to particular branches of the trade, or by general compilations covering the trade in all its phases. There are several trade guides, both in America and Europe, which give this information in detail.

### COTTON HANDLING

The facilities, methods, and costs in the different markets change from time to time. If one is to have access to the best and most economical methods of handling cotton he must seek information from many sources. Information regarding ginning may be secured from the Department of Agriculture, the manufacturers of gin machinery, and local ginneries. Facilities for moving and compressing cotton and the charges therefor must usually be obtained from the railroads and compress companies. Information regarding ocean transportation may be obtained from freight brokers, forwarding agents, shipping lines, railroads which issue through bills of lading,

and from the daily reports of the cotton exchanges and commercial papers. Information concerning warehouse facilities in the different markets may be had from chambers of commerce, or city cotton-trade organizations. The methods of warehouse construction, and the capacity and location of Federal licensed warehouses may be obtained from the United States Department of Agriculture. Information regarding State warehouse laws may be obtained from that branch of the State government charged with its operation.

#### FINANCE

The usual sources of information regarding credits are the local banks, city banks, the Federal reserve banks, and the intermediate credit banks.

### COOPERATIVE PERFORMANCE OF MARKETING SERVICES

The success of farmers' cooperative enterprises in marketing must be measured by their ability to perform one or more of the necessary services more efficiently than private enterprise, or they must obtain appreciable advantages to the farmers by more effectively linking their cotton growing and marketing problems. And they must do these things in ways which make it necessary for the farmer to join the association to reap the benefits. Cooperation in cotton marketing is not new, but each movement has been different in that it has been directed toward curing defects in more or less different phases of the marketing process.

The services required in cotton marketing are not so completely interrelated as to preclude choice in manner of performance. The growers may gin their cotton cooperatively and sell it independently. They may hire a private company to gin it, store it cooperatively, and sell it independently or cooperatively. They may confine their cooperative activities entirely to cooperative classing and selling.

The marketing services most frequently performed cooperatively are ginning, which includes baling and wrapping; warehousing; classing; and selling. Certain other services are rarely if ever undertaken by cooperative associations. These are compressing, shipping, insuring, and financing.

The history of cooperative movements in cotton marketing is a record of attempts to solve the problems of selecting the most urgent lines of work and adjusting the various methods of conducting these to suit the changing conditions and necessities of farmers. Much has been accomplished in the way of preparation for the ultimate success of cooperative cotton marketing even by those movements that were looked upon as failures. The more significant developments in this field are discussed in detail in Department Bulletin 1397, Cooperative Marketing of Cotton.

A typical association agrees to perform services summarized as follows: (1) To class the cotton according to grade and staple, (2) to pool it in even-running lots for sale, (3) to market it in an orderly manner, and (4) to make final returns to the grower on the basis of the average price of the cotton in each of the crop-year pools in which he has cotton. To carry out these obligations to the best advantage, the associations (1) provide an expert sales force

equipped with the best price quotation service; (2) put salesmen in all the big markets of the world; (3) borrow a large amount of money on bills of lading and warehouse receipts and advance it to growers; (4) obtain the freight refunds incident to concentration privileges for compressing; (5) prevent country damage and other loss by warehousing the cotton; (6) obtain cheap warehouse and insurance services due to large volume of business; (7) obtain valuable statistical information too expensive for individuals and local associations to procure; (8) advise growers regarding the types of cotton most likely to be in demand, and in some instances take an active interest in inducing their members to grow better cotton; (9) through their publications, field-work service, classing schools, and other contacts, do some valuable work; (10) in some instances take an active interest in improving general marketing facilities, such as the elimination of gin damage and a more equitable adjustment of freight rates. They may eventually stabilize the price of cotton through the proper merchandising of a large volume of cotton.

## SUMMARY

Marketing, from the standpoint of the owner, may be considered as the means of converting a physical commodity into purchasing power or value. The efficient conversion of raw cotton into purchasing power—the delivery from the farm to the mill—necessitates the performance of several services: (1) Preparation, (2) standardization, (3) classing, (4) assembling and distributing, (5) warehousing, (6) inspection and regulatory work, (7) financing, and (8) furnishing information. An efficient marketing system requires in payment for its services only a small proportion of the value represented by the crop. This constitutes the "spread" between what the farmer receives and what the spinner pays for cotton.

The product grown by the farmer, known as seed cotton, may be said not to be complete as a single commodity until it has passed through the processes of preparation, ginning, baling and wrapping, and assumes the form of a bale. The excellence of the product making up the bale depends upon the quality and condition of the cotton when delivered to the gin, the type and condition of the gin machinery used, and the care exercised by the ginner. Bales may be compressed before shipment or storage to reduce size, which usually results in a reduction of freight and other charges.

Standardization of a commodity is the setting up of authoritative measures of its qualities that are of economic significance. Efforts covering the last 100 years have brought cotton standardization to its present status, but the process will not be complete until the scheme of standardization embraces (1) grade, (2) color, (3) staple length, (4) character of the lint, and (5) weight, size, shape, and covering of the package or bale. Statistics of the industry will fall short of their maximum usefulness until commercial practices and trade terms are also better standardized. Standardization stimulates the improvement of the product, facilitates financing, and saves expense of inspection by making possible sales on description.

The purpose of cotton classing is to enable the farmer to sell his cotton on its merits, and the spinner to buy exactly what he requires

with the least amount of expense and effort. Classing encourages the sale of cotton on description, thus reducing the cost of handling; minimizes risk and enables buyer and seller to bargain on a narrower margin; and adds to the value of cotton as collateral.

Though a bale of cotton may change hands many times, it should be necessary to sample it but once. An expert classer is able to determine rather accurately from a representative sample the class of the cotton. The determination is made by sight and "feel," as well as by actual measurement.

The United States Government is now authorized to class cotton under four acts, and the far-reaching consequences of the cotton standards act in particular, out of which has grown the adoption of the universal standards for American cotton, are only beginning to be apparent.

Cotton purchased by merchants is assembled in even-running lots to meet spinners' requirements. Distribution is accomplished through a vast system of warehouses and cotton yards, compressing plants and loading platforms, and a banking system evolved to "carry" the crop through time and space.

Warehousing is essential to efficient cotton marketing. It affords physical protection from damage by weather or dust; from loss because of fire, mutilation, or petty picking; and from "tag switching" and other forms of fraud or theft. It provides the means of converting the title to cotton into more desirable collateral and makes possible a policy of gradual marketing. The warehouse receipt should show, among other things, the grade, staple, and condition of the lint; the weight of the bale; the tag number; by whom the cotton was classed; and a statement as to the insurance of the cotton and the negotiability of the receipt. The value of the warehouse receipt depends further upon the structure and location of the warehouse, upon the insurance provided, the size and nature of the bond furnished, and the efficiency, integrity, and standing of the responsible officials. The Federal Government through the United States warehouse act and the principal cotton-growing States, through their legislative enactments calculated to meet the needs of the sections individually, are exercising considerable regulation and supervision over the warehousing of the American cotton crop.

The development of a high class inspection service, in connection with the adoption of universal standards for American cotton, should eliminate some of the cost of marketing cotton. Whether provided by private business concerns, independently, or under supervision by a State, or by the National Government, inspection should (1) give the distant buyer confidence in the seller's statements of quality and quantity of product, and (2) assure the owner that the commodity, and his rights in it, are fairly protected when it gets beyond his immediate supervision.

Regulatory measures may originate in trade organizations or in some Government unit. They should be resorted to only when all other methods fail to prevent undesirable practices or to encourage practices conducive to general welfare. Among the many regulatory activities affecting the orderly marketing of cotton should be noted those in connection with the cotton futures act, railroad transporta-

tion, railroad freight rates, cotton warehousing and compressing, the tariff, and fumigation of imported raw cotton and cotton waste. Regulatory measures should be definite, easily understood, and fair; and they should be impartially and intelligently enforced.

Cotton marketing requires the service of financing all along the route from the farm to the mill. Costs of ginning, transportation, classing, storage, compression, and insurance are immediate charges borne directly by either buyer or seller. The purchase must be financed, and the stocks must be "carried" from the time of harvest until ultimately required for mill consumption. This is usually accomplished by securing loans on warehouse receipts or bills of lading for cotton. In addition, both the grower of the crop and the manufacturer of the cotton goods require the services of financing.

Cotton market information concerning demand, supply, price, functions and relationships of the several markets, personnel of buyers and sellers, cotton handling methods and facilities, finance, and insurance is needed by all in the industry. Much valuable information on these subjects is available through public and private agencies and is disseminated by means of market reports, trade directories, commercial papers, the telegraph, and the radio. Railroad and steamship companies, freight brokers, compress companies, chambers of commerce, and banks furnish valuable facts along special lines.

Much has already been accomplished by cotton growers through efforts in the direction of cooperative marketing.

## ORGANIZATION OF THE UNITED STATES DEPARTMENT OF AGRICULTURE

October 20, 1926

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